

**REMARKS****Summary of the Office Action**

In the Office Action dated April 5, 2005, claims 1, 10, 13 and 21 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,766,493 to Shin (hereinafter “Shin”). Claims 1, 3-10, 12-14, and 16-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over alleged admitted prior art (hereinafter “Related Art”) in view of U.S. Patent No. 6,391,137 B1 to Matsushima (hereinafter “Matsushima”). Claims 1, 3-10, 12-14, and 16-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over alleged admitted prior art (hereinafter “Related Art”) in view of U.S. Patent No. 6,675,817 B1 to Doh (hereinafter “Doh”). Claims 1, 2, 10, 11, 14, and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over alleged admitted prior art (hereinafter “Related Art”) in view of U.S. Patent No. 6,508,990 B1 to Yoshida et al. (hereinafter “Yoshida”).

**Summary of the Response to Office Action**

Applicant traverses the rejections under 35 U.S.C. § 102(b) and under 35 U.S.C. § 103(a) and requests reconsideration and withdrawal of these rejections.

**Applicant’s Response to the Rejections Set Forth in The Office Action****A. The Rejection under 35 U.S.C. § 102(b) based on Shin**

Claims 1, 10, 13 and 21 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Shin. Applicant respectfully traverses this rejection as being based on a reference that neither teaches nor suggests the novel features recited in each of independent claims 1 and 10.

For example, the method of fabricating a liquid crystal display panel, as recited in independent claims 1 and 10, includes a step of “cleaning exposed surfaces of the bonded upper and

lower substrates to remove foreign materials formed on the lower substrate during the preparing of the lower substrate” and a step of “simultaneously eliminating the cleaned exposed surfaces of the bonded upper and lower substrates.” In contrast, as depicted in FIGs. 3C-3G of Shin, and as discussed at column 4, lines 5-14 of Shin, “to prevent foreign materials or strong acid from entering between the first and second substrates, i.e. to prevent materials or strong acid from entering TFT device 11 and color filter 21, acid resistant sealant 15 is used.” (Emphasis added). Thus, Applicant respectfully submits that Shin does not teach or suggest the step of “cleaning exposed surfaces of the bonded upper and lower substrates to remove foreign materials formed on the lower substrate during the preparing of the lower substrate.” Further, as discussed at column 4, lines 15-24 of Shin, which encompasses the portion of Shin cited to by the Office Action, “After these processes, . . . the thickness of the upper and lower substrates is reduced . . . In order to reduce the thickness of the substrates, sandpaper or polishing device using a polishing agent may be used physically, instead of etching” (Emphasis added). Thus, Applicant respectfully submits that Shin does not teach or suggest the step of “simultaneously eliminating the cleaned exposed surfaces of the bonded upper and lower substrates.” Specifically, there is no teaching or suggestion of simultaneous elimination of cleaned and exposed surfaces of the bonded upper and lower substrates in Shin.

In view of the foregoing, Applicant respectfully submits that Shin does not teach each feature of independent claims 1 and 10. Applicant further submits that dependent claims 13 and 21 are not anticipated by Shin for at least the reason that they include the novel features recited in independent claims 1 and 10 upon which they depend, respectively. Accordingly, Applicant respectfully requests the withdrawal of the rejection of claims 1, 10, 13 and 21 under 35 U.S.C. § 102(b).

**B. The Rejections under 35 U.S.C. § 103(a) Based on Matsushima**

Claims 1, 3-10, 12-14, and 16-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Related Art in view of Matsushima. In this regard the Office Action states at page 3 that the difference between Related Art and the claimed invention is “the steps of cleaning the exposed surfaces of the bonded upper and lower substrates to remove foreign materials and simultaneously eliminating/removing the cleaned exposed surfaces of the bonded upper and lower substrates.” Then, the Office Action cites to a thinning process discussed at column 8, lines 26-36 in reference to FIG. 3 of Matsushima. Applicant respectfully submits that, as discussed in the portion of Matsushima cited by the Office Action, Matsushima merely describes “a thinning process of the glass substrates 100a, 101a” after “a cell member produced in the steps shown in FIGS. 1 and 2 in which liquid crystal was sealed.” Applicant respectfully submits that Matsushima does not teach or suggest at least the step of “cleaning exposed surfaces of the bonded upper and lower substrates to remove foreign materials formed on the lower substrate during the preparing of the power substrate” followed with a step of “simultaneously eliminating the cleaned exposed surfaces of the bonded upper and lower substrates.”

The Office Action further states at page 4 that “it is inherent that at least some foreign materials when the surface upon which they are adhered is etched away. Therefore, it can be considered that the surfaces are first cleaned and then eliminated” (Emphasis added). Applicant respectfully submits that the steps of first cleaning the exposed surfaces of the bonded upper and lower substrates, and then eliminating the cleaned exposed surfaces are not taught or suggested by Matsushima and only appears in Applicant’s own disclosure. Specifically, Matsushima does not teach or suggest removing impurity in advance of eliminating cleaned exposed surfaces to prevent formation of a stain on the rear of the lower substrate and the surface of the upper substrate as discussed at paragraph [0040] of Applicant’s own disclosure.

In view of the foregoing, Applicant respectfully submits that Matsushima does not cure the deficiencies of Related Art because Matsushima does not teach, suggest, or provide a motivation for the steps of first cleaning the exposed surfaces of the bonded upper and lower substrates, and then eliminating the cleaned exposed surfaces. As instructed by MPEP § 2143, “the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art rather than in Applicant’s disclosure. In Re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Moreover, “[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).” Thus, Applicant respectfully submits that independent claims 1, 10, and 14 are patentable over Related Art in view of Matsushima. Moreover, claims 3-9, 12, 13, and 16-21 are allowable at least because of their dependence upon allowable claims 1, 10, and 14 upon which they depend, respectively, and for the additional features that they recite. Accordingly, Applicant respectfully requests that the rejection of claims 1, 3-10, 12-14, and 16-21 under 35 U.S.C. § 103(a) based on Matsushima be withdrawn.

**C. The Rejections under 35 U.S.C. § 103(a) Based on Doh**

Claims 1, 3-10, 12-14, and 16-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Related Art in view of Doh. In this regard the Office Action states at page 6 that the difference between Related Art and the claimed invention is “the steps of cleaning the exposed surfaces of the bonded upper and lower substrates to remove foreign materials and simultaneously eliminating/removing the cleaned exposed surfaces of the bonded upper and lower substrates.” Nevertheless, the Office Action cites to a photolithography and ultrasonic vibration processes discussed at column 4, lines 13-18 and 42-44 in reference to FIG. 2 of Doh. In this regard, the Office Action asserts that “[i]t can be considered that the impurities are removed prior to the step of

eliminating exposed surfaces since the removal/etching process continues after the removal of at least some of the impurities.” Applicant respectfully traverses the Office Action’s characterization of Doh for at least the following reasons.

Applicant respectfully submits that, as depicted in FIG. 2 of Doh, and as discussed at column 3, lines 53-58 of Doh, “(2) the Teflon cassette 217 supporting the assembled glass substrate 219 is completely submerged in the etchant 221. (3) After the Teflon cassette 217 is completely submerged in the etchant 221, an ultrasonic oscillator 223 is oscillated within 30 seconds” (Emphasis added). To the extent that the ultrasonic oscillator of Doh could be interpreted as performing a cleaning process, Applicant respectfully submits that the cleaning step of Doh does not occur prior to the eliminating process. Moreover, Applicant respectfully submits that Doh states at column 4, lines 45-47, that “no special processes are needed before the photolithography processes to remove impurities attached on the surface of the glass substrate” (Emphasis added). Thus, Applicant respectfully submit that Doh does not teach or suggest removing impurity in advance of eliminating cleaned exposed surfaces to prevent formation of a stain on the rear of the lower substrate and the surface of the upper substrate as discussed at paragraph [0040] of Applicant’s own disclosure.

Furthermore, in embodiments of the present invention, the cleaning step removes “foreign materials formed on the lower substrate during the preparing of the lower substrate”, as recited in independent claim 1, or “during preparation of the lower substrate”, as recited in independent claim 10, or “during the forming of the protective layer”, as recited in independent claim 14. In contrast, as recited at column 4, lines 14-17 of Doh, “the ultrasonic vibration separates the impurities produced during photolithography processes from the surface of the substrate, and effectively removes the organic layer formed on the surface of the substrate.” Applicant respectfully submits that Matsushima does not teach or suggest at least the step of “cleaning exposed surfaces of the

bonded upper and lower substrates to remove foreign materials formed on the lower substrate during the preparing of the lower substrate” followed with a step of “simultaneously eliminating the cleaned exposed surfaces of the bonded upper and lower substrates.”

In view of the foregoing, Applicant respectfully submits that Doh does not cure the deficiencies of Related Art because Doh does not teach, suggest, or provide a motivation for the steps of first cleaning the exposed surfaces of the bonded upper and lower substrates, and then eliminating the cleaned exposed surfaces. Thus, Applicant respectfully submits that independent claims 1, 10, and 14 are patentable over Related Art in view of Doh. Moreover, claims 3-9, 12, 13, and 16-21 are allowable at least because of their dependence upon allowable claims 1, 10, and 14 upon which they depend, respectively, and for the additional features that they recite. Accordingly, Applicant respectfully requests that the rejection of claims 1, 3-10, 12-14, and 16-21 under 35 U.S.C. § 103(a) based on Doh be withdrawn.

**D. The Rejections under 35 U.S.C. § 103(a) Based on Yoshida**

Claims 1, 2, 10, 11, 14, and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Related Art in view of Yoshida. In this regard, the Office Action states at page 8 that the difference between Related Art and the claimed invention is “the steps of cleaning the exposed surfaces of the bonded upper and lower substrates to remove foreign materials and simultaneously eliminating/removing the cleaned exposed surfaces of the bonded upper and lower substrates.” The Office Action cites to a plasma etching process depicted in FIG. 10 and discussed at column 17, lines 3-11 of Yoshida. Applicant respectfully submits that Yoshida merely discusses applying a plasma etching process to a surface-to-be-treated. Moreover, as recited at column 16, lines 44-47 of Yoshida, “the declined part 14 of a substrate-to-be-treated 12 on which infrared radiation is incident utilizes the end surface configuration of the substrate as it is. Accordingly it is not necessary to subject the substrate-to-be-treated 12 additionally to chemical etching or additional

processing.” Thus, Applicant respectfully submit that Yoshida does not teach or suggest removing impurity in advance of eliminating cleaned exposed surfaces to prevent formation of a stain on the rear of the lower substrate and the surface of the upper substrate as discussed at paragraph [0040] of Applicant’s own disclosure.

In view of the foregoing, applicant respectfully submits that Yoshida does not cure the deficiencies of related art because Yoshida does not teach, suggest, or provide a motivation for the steps of first cleaning the exposed surfaces of the bonded upper and lower substrates, and then eliminating the cleaned exposed surfaces. thus, applicant respectfully submits that independent claims 1, 10, and 14 are patentable over related art in view of Yoshida. moreover, claims 2, 11, and 15 are allowable at least because of their dependence upon allowable claims 1, 10, and 14 upon which they depend, respectively, and for the additional features that they recite. accordingly, applicant respectfully requests that the rejection of claims 1, 3, 10, 11, 14, and 15 under 35 U.S.C. § 103(a) based on Yoshida be withdrawn.

The application is in condition for allowance. Notice of same is earnestly solicited. Should the Examiner find the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at (202) 496-7500 to discuss the steps necessary for placing the application in condition for allowance. All correspondence should continue to be sent to the below-listed address.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911.

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